

FORMATION OF CELLS IN THE APICES OF ROOTS.

Nägeli in the 'Linnæa,' vol. xvi. p. 252, says, "If exceedingly fine sections be made at the *punctum vegetationis*, where the different layers of the root meet as in one focus, and if some cells be then isolated by laceration, there will be found among them: 1. cells with one cytoblast; 2. cells with two cytoblasts; 3. cells with two cytoblasts and a septum between them. This I usually saw when examining the actually growing apex of a radicle of *Lilium*, *Tulipa*, or *Iris*. Once I saw a large, longish nucleus which appeared just in the act of division; another time, within one cell, two young cells each with a nucleus, which had not yet grown broad enough to form a septum by the union of their membranes. I feel justified by these facts in saying quite decidedly, that, in the apex of the roots of these plants, the growth takes place in such a manner that two cell-nuclei originate in each mother-cell, and around each of these nuclei a new cell. Unger maintains that the usual mode of origin in elementary organs is the formation of septa in the cells, *i. e.* self-division; the formation of new cells in those already existing is limited to a few cases; of the development of cell-nuclei into cells, I could observe nothing." Nor I either. I also saw light-coloured corpuscles in those root-cells, sometimes surrounded by a bright circle, but am inclined to affirm decidedly that no true cells originate from them.—*Link in his Report on Physiological Botany for 1842 and 43.*

*On the Demerara Pink-root, or Spigelia Anthelmia**. By
Dr. GEORGE R. BONYUN †.

The indigenous species of pink-root, which is in great repute among the labourers of British Guiana, particularly those residing on the banks of the rivers, has not as yet, I believe, in this colony been sufficiently brought to the notice of medical men, nor its relation to the *Spigelia marilandica*, or officinal pink-root, determined. This herb, which grows in great abundance on the west and Arabian coasts, and on the banks of the rivers, is identical with that described by Patrick Browne, anno 1756, p. 156, in his 'Civil and Natural History of Jamaica,' as "Anthelmintia or wormwood." He there says, "This vegetable has been long in use among the Negroes and Indians, who were the first acquainted with its virtues, and takes its present denomination from its peculiar efficacy in destroying worms, which I dare affirm, from a great number of successful experiments, it does in so extraordinary a manner, that no other simple can be of equal efficacy in any other disease, as this is in those which proceed from these insects, especially when attended with fever or convul-

* *S. Caule herbaceo ramoso, foliis oblongis utrinque attenuatis, summis quaternis, racemis spicatis staminibus corolla brevioribus.*—*Sprengel*, vol. i. p. 584.

† Read before the Agricultural and Commercial Society of British Guiana, 9th Sept. 1814.

sions." Griffith Hughes, in his 'Natural History of Barbados,' 1750, p. 230, likewise mentions this plant as a powerful anthelmintic, under the name of "Loggerhead weed." Fusée Aublet, 'Hist. des Plantes de la Guiane Française,' vol. i. p. 126, calls it, from Margraave and Plumier (1703), "Arapabaca," and gives the French name by which it is generally known through the French islands, "La Brinvilliers," after the infamous marquise de Brinvilliers, who, in conjunction with her lover St. Croix, poisoned so many people in France in the reign of Louis XIV. The 'Icones Plantarum Medicinalium,' Nuremburg, 1799, gives a plate of *Spigelia anthelmintica*, and Linnæus, 'Species Plantarum,' anno 1762, tom. i. p. 213, describes the plant; but no mention is made in either of these works of the Maryland species. Pereira, 'Elements of Materia Medica,' 1842, vol. ii. p. 1288, describes the *Spigelia anthelmintica* as possessing medicinal qualities similar to the Maryland species, quoting from Browne; and Nees ab Esenbeck, 'Handbuch der Medicinisch-pharmaceutischen Botanik,' 1831, vol. ii. p. 654, gives a long description of both species, giving however a preference to the Maryland species, "as being more used in North America."

I have been thus particular in giving an account of the history of our indigenous species in consequence of being desirous to show, that the vermifuge *Spigelia*, first brought to the notice of Europeans, was the one indigenous to the islands and continent of South America, and not the Maryland species, which became known afterwards, and has been since substituted for our species. The first mention of *Spigelia marilandica*, Pereira states, was in 1740, whilst the *Spigelia anthelmintica* was noticed by Plumier, 'Nova Plant. American.' gen. 11, in 1703, under the name of Arapabaca. The *Spigelia marilandica* is collected, according to Thompson, Pereira and others, by the Creek and Cherokee Indians, and sold to the American merchants. As it is scarcely used in England, a quantity only sufficient to supply the West Indies is imported, and that generally in a bad state. Pereira says, vol. ii. p. 1286, "Owing to the imperfect manner in which the plant is dried, it seldom happens that packages of it reach the market free from dirt and mouldiness."

The quantity of Maryland pink-root imported here may not amount to much; but it appears evident, if we can procure, in our immediate vicinity, without much labour, an article superior both in regard to freshness and activity, that it is worth while bringing it to the notice of poor people, who may turn a penny or two by collecting and drying the plant. To the medical men in the colony, who are in the habit of using a mouldy, uncertain remedy, sometimes in enormously bulky and disagreeable doses, as a *substitute* for the fresh plant within their immediate reach, it is a matter of some importance.

With regard to the great efficacy of the plant, the testimony of Browne, a learned physician and excellent botanist above quoted, and the experience of the common people (by no means a despicable criterion) ought to be relied on. The late Mr. J. D. Paterson of Christianburg, a gentleman of remarkable powers of observation and

strong intelligence, told me shortly before his death, that he was in the habit of administering the Demerara pink-root, in decoction, in the proportion of from two to three fresh leaves for a dose, and that the effect was much more certain and marked than that produced by the pink-root of the shops, in thirty or forty grain doses. I have likewise lately been informed of several cases in which the decoction of the fresh leaves of our species was efficacious when the Maryland pink-root failed.

I need not lengthen these few remarks, as my object is merely to suggest to medical practitioners the superiority of the fresh or recently dried *Spigelia anthelmia* to the broken and mouldy *Spigelia marilandica* brought into this colony from a great distance, and to introduce, however insignificant it may be, a new source of industry to the poor. The preparation of the plant for sale is very simple: it must be pulled up by the roots in a green state, and the seeds stripped off; it is then to be carefully cleaned, dried in the sun, and packed in bundles.

METEOROLOGICAL OBSERVATIONS FOR OCTOBER 1844.

Chiswick.—October 1. Clear: cloudy. 2. Densely clouded: clear. 3. Overcast: boisterous. 4. Clear and very fine: cloudy. 5. Very fine: rain. 6. Overcast: clear and fine: overcast. 7. Very fine: frosty. 8. Foggy: very fine. 9. Cloudy: boisterous at night. 10. Cloudy and mild: clear. 11. Heavy dew: very fine. 12. Foggy: very fine: showery. 13. Overcast: lightning at night. 14. Showery: rain. 15. Heavy shower: constant heavy rain at night. 16. Showery: clear and fine. 17, 18. Fine. 19. Slight haze: cloudy. 20. Fine. 21. Overcast: hazy. 22. Rain: cloudy: clear and frosty. 23. Dense fog: showery. 24. Cloudy: heavy rain. 25. Rain; densely clouded. 26, 27. Overcast and fine. 28. Foggy. 29. Overcast: rain. 30. Drizzly: cold haze. 31. Foggy: fine: clear.—Mean temperature of the month $0^{\circ} \cdot 76$ below the average.

Boston.—Oct. 1. Fine. 2. Cloudy and stormy: rain early A.M.: rain A.M. 3. Windy. 4. Fine. 5. Cloudy: rain P.M. 6—8. Fine. 9. Cloudy: rain A.M. 10. Cloudy: rain P.M. 11, 12. Fine. 13, 14. Fine: rain P.M. 15. Cloudy: rain P.M. 16. Cloudy. 17. Cloudy: rain P.M. 18. Cloudy. 19. Fine. 20. Cloudy. 21. Cloudy: rain P.M. 22. Cloudy. 23. Foggy: beautiful halo round the moon quarter past eight P.M. 24, 25. Cloudy: rain P.M. 26. Rain. 27. Cloudy. 28. Fine: rain P.M. 29. Fine. 30. Cloudy: rain A.M. 31. Fine.

Sandwich Manse, Orkney.—Oct. 1—3. Showers. 4, 5. Bright: showers. 6. Shower: aurora: showers. 7. Bright: clear. 8. Cloudy: drops. 9. Cloudy. 10. Bright: cloudy. 11. Bright: clear. 12, 13. Bright: cloudy. 14. Drizzle. damp. 15. Rain: cloudy. 16. Rain: showers. 17. Shower: rain. 18. Showers: 19. Frost: cloudy: shower. 20. Clear: fine: aurora. 21. Frost: fine. 22. Clear. 23. Clear: cloudy. 24. Bright: clear. 25. Fine: clear: aurora. 26. Fine: clear. 27. Cloudy. 28. Cloudy: clear. 29. Bright: clear. 30, 31. Cloudy.

Applegarth Manse, Dumfries-shire.—Oct. 1. Fair. 2, 3. High wind and rain. 4. Rain P.M. 5. Fair, but cloudy. 6. Showers. 7. Fair and fine. 8. Fair, but dull. 9. High wind and rain. 10, 11. Showers. 12. Rain A.M. 13. Cloudy and threatening. 14. Showery. 15—17. Fair and fine. 18. Fair and fine: frost P.M. 19, 20. Showers; thunder: hail. 21. Fair and fine: frost. 22—24. Fair and fine. 25. Showery. 26. Fair and fine. 27, 28. Fair, but cloudy: frost. 29. Slight rain. 30. Rain P.M. 31. Fair, but cloudy.